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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,456	10/27/2003	Ki-Cheol Lee	5000-1-472	2495
33942 7590 01/04/2007 CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			EXAMINER WANG, QUAN ZHEN	
			ART UNIT 2613	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS			MAIL DATE 01/04/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/694,456	Applicant(s) LEE ET AL.	
	Examiner Quan-Zhen Wang	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because undue length. Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of numerous typo and grammatical informalities. The following shows some the informalities:

In claim 1, line 5, "transmitting" should be changed to "transmit".

In claim 1, line 7, "unit)" should be changed to "unit".

In claim 1, line 5, "transmitting" should be changed to "transmit".

In claim 9, line 4, "broadcasting network" should be changed to "a broadcasting network".

In claim 9, line 5, "transmitting" should be changed to "transmit".

In claim 15, line 12, "frequency)" should be changed to "frequency".

Appropriate correction and careful revision are required to clean up all of the informalities in the specification.

### *Drawings*

3. The drawings are objected to because the label in foreign language in fig. 6 should be replaced by label in English. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the

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application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Carefully revision is needed to clean up all of the indefinite problems in the claims. The following is some of the problems:

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Claim 1 recites the limitation "the integration of ..." in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the received broadcast" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the single broadcast/communication-integrated optical signal" in lines 11-12. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the integration of ..." in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the received broadcast" in line 5. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 7-12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art figs. 1-2 (APA) in view of Bodeep et al. (U.S. Patent US 5,822,102).

Regarding claims 1 and 9, APA (figs. 1-2) discloses a Wavelength division multiplexing-passive optical network that transmits broadcast and communication data,

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the network comprising: an optical line terminal (figs. 1-2, OLT) to (1) receive a digital broadcasting signal from a broadcasting network and a first communication signal from an internet protocol network, and (2) transmitting the received digital broadcast signal and the first communication signal as optical signals (figs. 1-2,  $\lambda 1$ - $\lambda 64$ ); an optical network terminal/optical network unit (fig. 1, element 12 and fig. 2, element 22) as a user-side device for transferring (1) the optical signals, from the optical line terminal, to a service user (not shown), and (2) user data from the service user to the optical line terminal; a first WDM demultiplexer (fig. 2, WDM 23) for WDM-demultiplexing the single broadcast/communication optical signals from the optical line terminal, and transferring it to the optical network terminal/optical network unit; and a first WDM multiplexer (fig. 2, WDM 24) for WDM-multiplexing the user data from the optical network terminal/optical network unit and transferring it to the optical line terminal. The APA differs from the claimed invention in that the APA does not specifically disclose that the broadcast signal and the communication signal are integrated as a single integrated optical signal. However, it is well known in the art to integrate a broadcast signal and a communication signal to form a single integrated optical signal for transmission in a PON. For example, Bodeep discloses (fig. 1) to integrate a broadcast signal (fig. 1, signal from video server) and a communication signal (fig. 1, signal from data server) to form a single integrated optical signal (fig. 1, signal from XMTR 130) for transmission in a PON. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the signal integration method of Bodeep in the

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system of APA in order to transmit both a broadcast signal and a communication signal to a user with the same optical transmitter.

Regarding claims 2 and 10, the APA further discloses that the optical line terminal is further enabled to transfer a second communication signal, received from a service user, to the IP network (fig. 2, ONT/ONU 32).

Regarding claims 3 and 11, Bodeep further discloses that the optical line terminal includes a photoelectric converter (fig. 1, F.O.XMTR 130) used to produce the integrated optical signal.

Regarding claims 4 and 12, Bodeep further discloses that the user data includes channel-information data of a digital broadcast desired by the service user and the second communication signal (column 6, lines 6-12).

Regarding claim 7, Bodeep further discloses that a single wavelength for optical transmission between the OLT and the optical network terminal/optical network unit is assigned to each service user (fig. 1).

Regarding claims 8 and 15, the APA (fig. 1) further discloses that the optical line terminal further includes an optical amplifier for optically-modulating and amplifying an analog broadcast signal (inherent), and an optical coupler (inherent) for combining the analog broadcast signal with the single broadcast/communication-integrated optical signal, so as to receive and transmit the analog broadcast signal, the network further comprising: an optical splitter (fig. 1, splitter 15) for separating an optical signal, combined with the analog broadcast signal, from the optical line terminal into the analog broadcast signal and the single integrated optical signal, and transmitting the separated

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signals; a photoelectric converter (fig. 1, O/E 16) for photoelectrically converting the analog broadcast signal separated through the optical splitter; and a radio frequency splitter (fig. 1, RF splitter 17) for distributing the photoelectrically-converted electrical analog broadcast signal to the optical network terminal/optical network unit.

***Allowable Subject Matter***

8. Claims 5-6 and 13-14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

qzw  
12/12/2006



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